LEARNING & KNOWLEDGE

CRITICAL ELEMENTS TO

SUSTAINED COMPETITIVE ADVANTAGE

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Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously in its entirety or in part submitted at any university for a degree.

ABSTRACT

The increased rate of competitive challenges imposed on organisations by global economy, technological product changes, processes (Dixon, 1992; Dodgson, 1993), and abundance of information available (Huber 1991) necessitate organisations to unlearn, learn and relearn faster than others to survive. The development of sustainable competitive advantages is a vital management function and an important organisational requirement is to nurture learning and create new knowledge enabling organisations to exploit, develop and utilise resources better than rivals do. This paper originated from the need identified in my company that learning and use of new knowledge are essential elements to sustain competitive advantage. At the moment this is not the case and the challenges imposed on the organisation regarding technological advancements and rapid local and global environmental changes, has already negatively impacted the organisation's competitive position. Today learning is being experiences as just another expense and the use of new knowledge is not visible, as a matter of fact knowledge is being confused with information. Information is being "recycled"; in other words more of the same is shared and used within the organisation. Hardly any new knowledge is generated as the same minds that created problems are being used to solve them. In my opinion both learning and knowledge are strategic organisational requirements which must be nurtured and managed to (i) ensure return on investments, and (ii) strengthen the organisations future competitive position. The focus of the paper is to contribute to a deeper understanding of learning and knowledge, the linkage between individuals, organisations and learning loop approaches. Barriers preventing learning and use of knowledge will be identified as well as how the use of knowledge forms the foundation to achieve sustained competitive advantages to outsmart, outmaneuver and outwit the competition.

Keywords:

Knowledge; learning; organisational learning; competitive advantage; learning approaches, organisational barriers.

ABSTRAK

Die snel veranderende kompeterende uitdagings waaraan maatskappy vandag blootgestel word, bv globalisering, ekonomiese impak, tegnologiese produk en proses veranderinge asook die oorvloed inligting wat beskikbaar is, vereis dat maatskappye hul leerprosesse mbt "unlearn, learn and relearn" vinniger moet toepas om kompterend te bly. Die ontwikkeling van kompeterende voordele is 'n kern bestuurs funksie en 'n belangrike voorvereiste tov die organisatoriese leerproses en skepping van nuwe kennis om 'n voorsprong bo die konkurrente te bewerkstellig. Die oorspronklike idee vir die skripsie het binne my eie maatskappy ontstaan, waar die tekortkominge mbt die gefokusde daarstelling en gebruik van nuwe kennis, vir die behoud van 'n mark leierskap posisie, tans nie sigbaar is nie. Die snel veranderende tegnologiese en ekonomiese eksterne omgewing het reeds 'n negatiewe en detrimentele impak op die maatskappy gehad. Vandag is die leerkurwe en gebruik van nuwe kennis binne die maatskappy nie 'n fokus area nie. Kennis word tans met inligting verwar en dieselfde persone verantwoordelik vir die oorsaak / skep van probleme word gebruik om probleme op te los, maw inligting word "gehersirkuleer" binne die maatskappy. Die doel van die skripsie is om 'n bydrae te maak mbt die raakvlakke tussen die onderskeie leer benaderings, kennis, individue en die maatskappy en hoe die onderskeie benaderings by die leerproses inpas. Hindernisse wat die gebruik van kennis kan inhibeer en beperk word ge-identifiseer en laastens word die fokus op hoe die gebruik van kennis en kundigheid die basis kan vorm vir die verkryging van onderhoudende kompeterende voordele, geplaas.

CONTENT

Chapter 1

Introduction

"The greatest difficulty lies not in persuading people to accept new ideas, but in persuading them to abandon old ones " - John Maynard Keynes

Jean M Auel's four-volume epic novel paints a story of adventure and love in the Stone Age. The heroine in the story, Ayla, was a lost infant when rescued by the Neanderthal clan, the Clan of the Cave Bear, and was raised by her adoptive mother and uncle, the head medicine man of the clan. The Neanderthal forefathers passed on immense knowledge to the clan. However the clan believed that the knowledge of their forefathers was complete and that new learning was the work of bad spirits. Ayla had an impulse to learn and so she did. Because of her insistence to explore and learn, she was shunned and became an outcast. She, despite suffering and hardship, survived and continued her journey with the rest of humanity. Civilization was born because of the human drive to explore, discover, learn and pass knowledge to new generations. The Neanderthal species became extinct, because of their culture, values and refusal to adapt, change, and learn new knowledge, skills or new ways. They considered all new knowledge, tools, behaviour and techniques as signs of evil. The main theme of this artistic novel is learning, adaptation and use of knowledge.

BUSINESS IN THE 21ST CENTURY

In the 21st century knowledge landscape, organisations cannot afford to be like the Neanderthal clan. In recent books and articles authors such as Davenport and Prusak (1998), Johnson (1998), Zack (1999) and Alavi & Leidner (2001) emphasize the criticality associated with corporations developing organisational wide knowledge to create and sustain competitive advantages. The complex and challenging environment is being transformed by factors such as globalisation, technological development, increasingly rapid diffusion of new technology, to the development and use of knowledge (Hitt, Keats, & DeMarie, 1998). This new landscape requires organisations to do things differently in order to survive and prosper. Organisations must find new sources of competitive

advantage and engage in new forms of competition. If not, these organisations will become like the Neanderthal clan.

TODAY'S COMPETITIVE CHALLENGES

Today business will become extinct or non-relevant by refusal to acquire or use new knowledge and even more so, by neglecting to capture and pass existing and new knowledge on to make the organisation more competitive. Peter Drucker (1993) said that: "the productivity of knowledge is increasingly going to be the determining factor in the competitive position of a country, an industry, a company or an individual. The only thing that increasingly will matter in national as well as in international economics is management's performance in making knowledge productive". In the past companies relied on economies of scale, marketing and sales proficiency, quality and customer service movements to drive competitiveness. Today it is widely accepted that learning and deployment of knowledge is key to the organisations' competitiveness. It has been recognised as the differentiating factor, and source of competitive advantage (Drucker, 1993, Nonaka *et al*, 1996). Doz (1996) argues that "the role of the acquisition and development of unique non-tradable assets (i.e. knowledge) is the key factor that differentiates companies which successfully achieve a strategy versus those that do not succeed in achieving the same strategy". Knowledge has displaced traditional assets such as land, labour and capital as the principal source of industrial value. Intellectual capital (knowledge) "the sum of everything everybody in an organisation knows that gives it a competitive edge" (Stewart, 1997) has become an elusive, intangible, but critical organisational asset.

The increased rate of competitive challenges imposed on organisations by global economy, technological product and process changes, (Dixon, 1992; Dodgson, 1993) and abundance of information (Huber 1991) necessitate organisations to unlearn, learn and relearn faster than their competitors to survive. De Geus (1997) explains that one-third of the Fortune 500 companies disappear every 15 years due to the inability to learn faster. Many scholars emphasize the importance of organisational learning for corporate survival. For instance, Stata mentioned as early as 1989 that

organisational learning and use of new knowledge may become the only sustainable competitive advantage. Senge (1990) mentions that a learning organisation creates its future by continuously improving its capabilities and competencies. Kim (1993) states that learning is the fundamental requirement for organisations' sustained existence. Dodgson (1993) argues that learning is required for adaptation and improved efficiency in times of change.

OBJECTIVE OF THE PAPER

The objective of this paper is to present a contribution to the discussion of learning and knowledge as a source of competitive advantage. This paper will explore the links and relationship between organisational learning capabilities and competencies, the organisation and individual, the importance of knowledge etc. by arguing that learning and use of knowledge form the foundation to achieve sustainable competitive advantage. The focus will be on those elements that enable organisations to become learning organisations. In the process answers will be sought for questions listed below:

- What is organisational learning?
- What is the relationship between individual and organisational learning?
- How do the learning approaches / loops contribute to organisational learning?
- What is knowledge?
- What are the barriers preventing the utilisation, creation and sharing of knowledge?
- How do organisations use knowledge?
- What role does knowledge play in providing the organisation with a competitive advantage?

Finally, findings and conclusions are presented with the intention of creating a deeper understanding of how learning and use of knowledge ensure a sustainable competitive advantage.

Chapter 2

Methodology

This paper will make use of secondary sources on learning, learning approaches and use of knowledge within organisations. Most of the reviews make the point that existing literature falls readily into two groups (i) popular works directed to managers, and (ii) academic works designed to make a theoretical contribution. However, what is less clear, despite all the literature published on the subjects of organisational learning and use of knowledge is what and how organisations should learn, and how effective organisational learning and use of knowledge translate the concepts into action.

The study is designed to include the obvious and documented aspects of learning and use of knowledge, and the linkage to sustained competitiveness. Information was obtained from secondary sources, peer-reviewed journals, white papers, conference presentation, Internet searches and academic writings and books written on organisational learning, learning approaches and processes, knowledge, learning and use of knowledge. In order to define meaningful definitions and views on organisational learning, knowledge and learning the research includes some of the most quoted authorities in this specific field. This was not difficult to do. Today few articles fail to mention the valuable and sterling contributions of Polanyi (1958), Penrose (1959), Cyert & March (1963), Argyris & Schon (1978), Senge (1990), Prahalad & Hamel (1990), Leonard-Burton (1992), Kim (1993), Nonaka & Takeuchi (1995), Davenport (1998), Prusak (1998), Sveiby (1999), Zack (2000) and Teece (2000) to name a few. The views and opinions of these and other authors are incorporated in the paper to create a deeper understanding of learning, knowledge, learning approaches, core competencies, organisational capabilities, barriers preventing the use of knowledge and links between individual and organisational learning. No biases regarding publication cut-off dates was considered and the sources are referenced at the end of the paper.

The main focus in chapter three includes an introduction and discussion on the concept of organisational learning, as well as the importance of identifying the dynamic characteristics of

organisational competencies and capabilities to achieve sustained competitiveness. The interactive learning process between the organisation and individuals, on all levels within the organisation, is briefly touched on. To conclude the chapter a conceptual organisational learning framework as summarised by Pawlowsky (2000), who argues that management should consider four dimensions to form the basic cornerstone of an integrated organisational learning framework.

In chapter four learning approaches and learning loops and how these elements contribute to the learning process is discussed. Argyris and Schon (1978) suggest that learning occur when errors are detected and argue that the single-, double- and triple learning approaches could result in newly developed work processes and routines to sustain competitiveness. The importance of cognitive learning patterns such as unlearning, learning and relearning are crucial to organisational learning processes as it puts emphasis on behavioural and instrumental characteristics of change within organisations.

Chapters five and six address the questions of "what is knowledge", how knowledge is used within organisations and which organisational barriers can hamper or prevent knowledge to be shared. Learning and knowledge barriers, such as organisational culture, structure and self-referentiality frameworks can prevent sharing and use of knowledge within an organisation. Organisational culture shapes assumptions about what mediates the relationship between individuals and the organisation, and shape the organisation's reaction to new knowledge. Organisational structures on the other hand identify roles within an organisation that provide a balance in organisational design. Self-referential frameworks can be detrimental in that organisations could fail to detect errors, and targets what is already known in the organisation, leading to the fact that more of the same is being "moved" around in the organisation.

In chapter seven the findings and concluding thoughts bring together the "golden thread" identified throughout the paper, e.g. how learning, use of knowledge and the other elements could create a sustained competitive advantage for the organisation.

Chapter 3

Organisational Learning Theories

"There is nothing permanent, except change"
Heraclitus

INTRODUCTION

All organisations learn, whether they consciously choose to or not. Learning is a fundamental requirement for sustained existence, however not all learning can be tied to actions or processes that produce known or productive outcomes. Traditionally organisational learning takes a long time to come to fruition. The time between market changes and development of core competencies and organisational capabilities, to meet new challenges, as well as the reconfiguration of strategic organisational learning processes may only be completed when the next change impacts the organisation. As the rate of change accelerates, yesterday's accomplishments and today's success do not guarantee tomorrow's success. For some organisations, the ability to learn faster than the competitor is a critical competitive weapon in ensuring survival and continued success. The debate on organisational learning, core competencies, organisational capabilities as well as the interactions between individual and organisational learning processes have been well documented in literature. In conclusion Pawlowsky's (2000) proposed four dimensions, systems level, utilising learning modes, learning types and learning processes is illustrated and briefly explained.

WHAT IS ORGANISATIONAL LEARNING?

As a concept organisational learning has been around since the late fifties and can be traced to theorists who began developing behavioural organisational theories (Polanyi, 1958; Penrose, 1959; Cyert & March 1963). It is during the last decade that the concept attracted the attention of researchers who seeked to understand and develop theoretical models on how to increase the organisation's adaptability to environmental changes. Perhaps the most dominant feature in organisational learning literature is the lack of convergence on what organisational learning is. To

some scholars organisational learning is decomposable into information processing stages (Sinkula 1994) or self-regulating process of error-detection and error-correction (Argyris 1978), to others organisational learning incorporates a set of specific learning foundations (Tobin 1993) or core disciplines (Senge 1990). According to Cyert & March's (1963) organisational learning is triggered by external shocks or disturbances, making adaptation necessary and mention that organisations learn by memorizing external disturbance and internal reaction combinations to increase adaptability to environmental changes. A fundamental reason for the lack of convergence is that the *concept of organisational learning is embedded in different theoretical views.* For example, while Senge (1990) adopts a normative view, where organisational learning is a matter of strategic choice, authors such as Huber (1991) argue for a process view, suggesting that learning is a process inherent to all organisations. Evidently, to some authors organisational learning is a matter of implementation, while to others it is a matter of exploitation. These differences lead to a lack of consensus of what organisational learning really is. Polanyi (1958) argues that a lack of consensus can be an obstacle, but the theoretical diversity views do not necessarily have to be detrimental to the organisational learning concept, as long as the views contribute to the understanding of the learning phenomena.

Organisations' value and appreciate learning if it is viewed in terms of the contribution it makes to sustain competitiveness. Some organisations deliberately advance organisational learning consistent with their objectives; others make no deliberate effort and acquire counterproductive habits. A major management challenge is to understand to what extent organisations learn to establish the ability to meet new challenges. Ultimately learning must lead to behavioural change. This understanding is embodied in the Noah principle that states that one survives not by predicting rain, but by building an ark. To achieve adaptability organisations deliberately need to align organisational dimensions such as vision, strategy, leadership, culture, structure and processes to facilitate organisational learning.

Another stream of thought is based on the idea that organisations learn as independent entities and that the value of learning is viewed in terms of the speed organisations innovate, learn and adapt. Palmer and Hardy (2000) note that "most researchers assume that organisational learning produces

only positive benefits on performance" to the point where discussions on organisational learning is nearly enigmatic. Scholars researching organisational learning almost never fail to make references to the notion that if organisational learning is implemented properly it could yield superior organisational performance and sustained competitiveness. Senge (1990) argues that organisational learning is a new source of competitive advantage and "where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together".

ORGANISATIONAL COMPETENCY AND CAPABILITY VIEWS

The rapidly changing global market force organisations to seek a competitive advantage by building key organisational capabilities and competencies. Building on the understanding that the organisation's learning ability is a determining factor for success, Sanchez, Heene and Thomas (1996) point out that organisations follow strategic logic to achieve goals by utilising organisational resources, competencies and capabilities to create competitive advantage. Competencies and capabilities have a dynamic character and need to be improved and/or transformed in a continuous process in order to adapt to environmental changes. Organisational learning takes place within defined frameworks Argyris and Schon (1978) and authors such as Zack (1999) and Teece *et al* (1992) have established new ways of theorising organisational learning e.g.

- **Resourced-based view** according to Zack (1999) "is grounded in economics and explains how a company's resources drive its performance in a dynamic competitive environment". This view combines the internal analysis within organisations and external analysis of the industry with the competitive environment. The real key to success lies in the organisation's ability to create or find competencies that is truly distinctive and unique in the marketplace.
- **Dynamic capability views** focus on sources and methods of wealth creation captured by organisations operating in environments of rapid technology changes (Leonard-Barton, 1992; Teece, Pisano & Shuen, 1992). The competitive advantage of the organisations is seen as resting on distinctive processes shaped by the organisation's asset positions. The term "dynamic" refers to

the capacity to renew competencies to achieve congruence with the changing business environment, innovative responses, rate of technological changes etc. The term "capabilities" emphasise the key role of strategic management in adapting, integrating and reconfiguring internal and external organisational skills and resources to match external environment changes.

Organisational Competencies

In the late 1970's and 1980's writers explored the concept of competence as a basis for improving human and management performance. Organisations have conducted studies to identify competencies to ensure success and have applied the results to recruit, train, and evaluate employees. Unfortunately, few agree about what constitutes a competency, because competencies are most of the times mixed up with skills and confused with personality traits.

Hamel and Prahalad (1990) understand competencies as "the collective learning in the organisation, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies". Parry (1998) defines competencies as a "clusters of related knowledge, attitudes and skills that affects a major part of a job; correlates with performance on the job; can be measured against well-accepted standards; and can be improved via training and development". Hamel & Prahalad (1994) see a competency as "a bundle of skills and technologies that enables a company to provide a particular benefit, that represent a sum of learning across individual skills and sets of organisational units" (Hamel & Prahalad, 1994), rather than a single discrete skill or technology. It could be said that competencies are the knowledge, skills, attitudes or values "found" in individual behaviours or performances, and are the demonstrated abilities of individuals to perform isolated tasks. Hamel & Prahalad (1994) focus on two types of competencies: (i) technological competencies and (ii) the speed organisations adapt to the marketplace.

The competency concept is not new. Leonard-Burton (1992) explains that "various authors have called them distinct competencies (Hitt & Ireland, 1985), core or organisational competencies (Hamel & Prahalad, 1990), firm-specific competence (Pavitt, 1991), resource deployments (Hofer & Schendel,

1978) and invisible assets (Itami, 1987). To recognise the competency it is necessary to understand the underlying distinctive capabilities that sustain it. Hamel (1994) argues this point in his theoretical illustration of core competencies, "building core competencies requires the accumulation and integration of learning and knowledge residing both within the firm and without". Prahalad and Hamel (1990) further argue that core competencies capture the organisation's collective learning. Itami and Numagami (1991) suggest that knowledge is the most fundamental of an organisation's core competencies. Similarly Senge and Sterman (1992) suggest that creating and sustaining a competitive advantage depend on the degree of organisational learning. Competencies could be viewed as:

- Aspects of capabilities that denote the visible elements of performance capacities.
- "An ability to sustain the coordinated deployment of assets in a way that helps an organisation to achieve its goals" (Sanchez, Heene & Thomas, 1996).
- Building and leveraging activities that are of significant importance for an organisation's competitive position, but also constitute an important input to the creation of "organisational knowledge" (von Krogh, Roos & Slocum, 1994; Senge, 1990).

Today there seems to be a near universal agreement that the notion of core competencies and the concept of organisational learning and knowledge creation have taken its prominence in the business environment to achieve competitive advantage. Core competencies, the basic unit of competitive advantage, rarely consist of narrow skills or outputs. Rather the competitive advantage comes from bundles of skills or know-how built and nurtured by management to enforce the necessary networking and cooperation to allow for the development of core competencies. However the flip side of core competencies, core-rigidities inhibit innovation and "are activated when companies fall prey to insularity or overshoot an optimal level of best practices" (Leonard-Barton, 1992). Iles (1994) suggests the use of competencies and identifies two potential problems, (i) who defines the competencies and (ii) are the competencies defined in the same language as other organisational processes such as

recruitment. If not the competencies may merely reflect what is already happening and encourage more of the same.

Organisational Capabilities

The emergence of the capability theory is accompanied by a proliferation of terms such as architectural competencies (Henderson and Cockburn, 1994) and strategic capabilities (Lenz, 1990). These terms typically refer to the possession of superior organisational capabilities relative to those of competitors. Stalk and Shulman (1992) argue that core competencies represent technological and production expertise at specific points along the value chain, whereas capabilities are more broadly based and encompass the entire value chain. This suggests that capabilities are visible to the customer in a way that core competencies rarely are. Capabilities also refer to the organisation's capacity to perform a range of organisational activities and routines to deliver products and services to the market in a manner that outperforms competitors and are clearly related to organisational learning processes.

Leonard-Burton (1992) dimensionalises organisational core capabilities into: employee, knowledge and skill, physical and technical systems; managerial systems and value and norms – dimensions that are recognised as manifestations of tacit, explicit and cultural knowledge. Capabilities set the organisation apart from the competitors and give it a competitive edge. Central to the process of building competitive advantage is the potential effects of different organisational capabilities. Capabilities provide the definition of individual "frames of reference" and how individuals contribute to organisational outcomes. In general capabilities:

- Contain collected physical, human and social capabilities existing within an organisation, and are abilities to be developed or used by the organisation.
- Develop within organisations through the interaction of tangible and intangible resources, primarily based in individual and organisational information and knowledge.
- Define the range of activities performed within an organisation, which may be enhanced through the development of individual or group knowledge.

- Are seen as the "wellspring" of the organisational learning processes (Leonard-Barton, 1995).
- Are often less visible to competitors and more difficult to imitate, and hence provide a base for creating sustainable and robust advantages over competitors?

The capability-based theory of competitive advantage suggests that organisations possessing distinctive capabilities will achieve a competitive advantage, which refers to the extent competitors are unable to duplicate benefits or distinctive capabilities on which a competitive strategy has been founded (Grant, 1999).

In summary, the capability-based theory has grown in influence during the last decade as the strategy dialogue moved away from the environmental model and resource-based views. According to the environmental model, competitive advantage is determined by industry characteristics rather than through the creativity of individual organisations (Porter, 1985 & 1990). In contrast, the resource-based view postulates that an organisation's profitability is not only the function of its market and competitive position, but also a function of its internal capabilities and know-how (i.e. knowledge) by combining the resources to enhance organisational performance. It could then be said that organisational activities are based on capabilities and knowledge generated through ongoing processes by absorbing information from internal and external sources, converting it to knowledge (primarily through the cognitive capabilities of an employee), and act upon that knowledge. Today organisations require capabilities that go beyond what management theorists have described and categorised as competencies.

INTERACTION BETWEEN INDIVIDUAL AND ORGANISATIONAL LEARNING

To assume that organisations go through the same learning process as humans seems unnecessarily naïve (Cyert & March, 1963). The relationship between individual and organisational learning has been extensively discussed within literature and to most authors it seems obvious that individuals play an important role in organisational learning. Simon (1991) states that "all learning takes place inside individuals heads", however authors tend to agree that organisational learning is more than a simple

aggregation of individual learning (Fiol & Lyles, 1985), as it is difficult for individuals to guide or control organisational learning processes. An organisational or collectively constructed view of reality can only develop if individuals are prepared to discuss and negotiate their individual views. Argyris and Schon (1978) consider individual learning as a necessary, but insufficient, condition for organisational learning. A representative, but not complete, overview of the question of how organisational and individual learning relate to each other, is presented in Table 1 below:

Table 1: Perspectives on the interaction between individual- and organisational learning

Argyris & Schon (1978)	The results of individual learning must be embedded in organisational memory in order to speak of organisational learning
Duncan & Weiss (1979)	Organisations have learned if new knowledge, relevant to organisational activities, has become available to other members in the organisation.
Hedberg (1981)	Organisations learn from results obtained from individual learning is incorporated in organisational memory and have become independent of any individual.
Huber (1991)	Organisations learn when it acquires knowledge that is recognises as potentially useful for the organisation.
Kim (1993)	Individual learning must become embedded in the organisation's memory and structure, requiring an exchange of individual and shared mental models.
Dodgson (1993)	Organisational learning is the meaning of the dominant coalition.
Nonaka & Takeutchi (1995)	What an individual has learned needs to be organizationally amplified, crystallized, transformed, legitimized and justified.
Crossan *et al* (1999)	Individual learning needs to be institutionalized and embedded in systems, structures, strategy, routines and practices of the organisation.

Source: Berends, Boersma & Weggeman (2001)

As can be seen from Table 1, individual learning should be shared, incorporated and institutionalised, in organisational memory for the organisation to realise that it has organisational value. Some authors

suggest that one or more extra conditions have to be fulfilled for individual learning to run into organisational learning. Approaches making individuals central to the organisational learning process focus on people, motives, interests, and values (Argyris & Schon, 1978; Kim 1993). Some of the ideas might be complementary others contradict each other. Huber (1991) mentions that it seems reasonable to conclude that organisational learning occurs when individual interpretations have been developed and captured.

Definitions of organisational learning emphasise that individual learning processes are seen as a precondition for organisational learning. However the definitions also emphasise that learning by an organisation is different from and should be regarded as more than the sum of individual learning processes (Senge, 1990).

It is worth noting that individual learning is not necessarily positive or contributive to the organisation, because employees may learn something negative or may learn to improve themselves rather than benefit the organisation. On the other hand, the individuals' learning activities, in turn, are facilitated or inhibited by an ecological system of factors, an organisational learning system (Argyris & Schon, 1978). The relationship between individual and collective learning is a most important aspect that distinguishes learning organisations from one another. However if a distinction between the organisation and the individual is not made explicit, a model of organisational learning will either obscure the actual learning process by ignoring the role of the individual (and anthropomorphizing organisations) or become a simplistic extension of individual learning over organisational complexities (Kim, 1993).

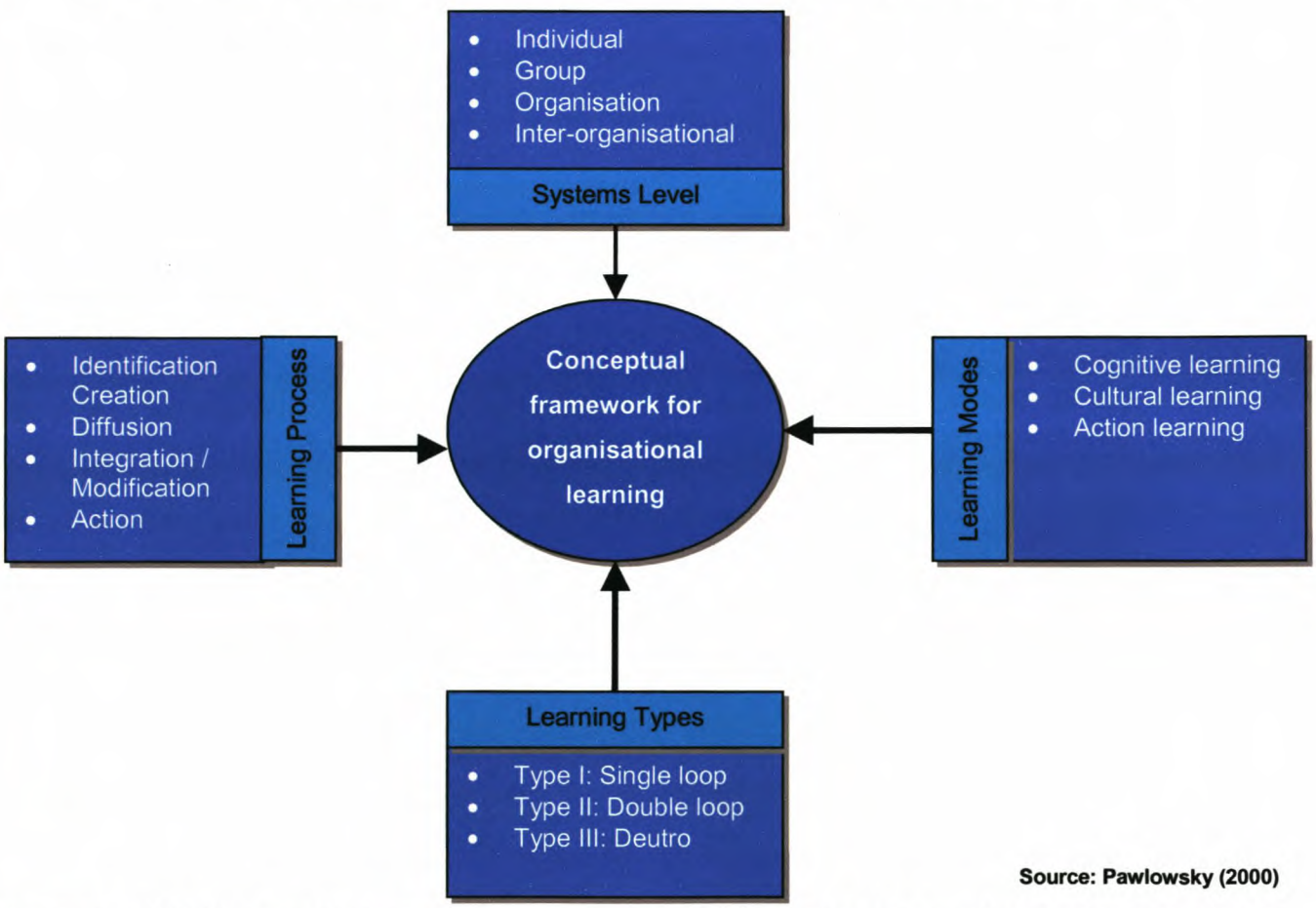
A learning organisation evolves as a result of the learning and behaviour of its people (Senge, 1990). The ability of an organisation's workforce to learn faster than those in other organisations constitutes the only sustainable competitive advantage at the disposal of a learning organisation (De Geus, 1997). Organisational learning should be a place where individuals consciously interact with others through

the process of education and experience. Therefore, a learning organisation should primarily focus on valuing, managing and enhancing the individual development of its employees.

CONCEPTUAL ORGANISATIONAL LEARNING FRAMEWORK

The debate on the nature and processes of organisational learning has been neatly summarised by Pawlowsky (2000) in his diagram represented as Figure 1. Pawlowsky proposes four different dimensions of organisational learning.

Figure 1: Conceptual Framework for the Management of Organisational Learning



Source: Pawlowsky (2000)

Pawlowsky (2000) urges that management take into account four dimensions to form the basic cornerstone of an integrative organisational learning framework, to form the basic architecture for the management of knowledge to promote organisational learning.

(i) Management should take into account **system-levels** and its inter-connectives by learning to deal with complexity and interdependent variables on different system levels. Individuals with their learning capabilities and possible emotional defences derived from anxiety, fear or uncertainty in unstable settings, team as social systems to function according to specific group dynamic laws, and form knowledge networks between core organisation members, external suppliers, customers, knowledge workers and many others.

(ii) The management of **learning modes** is a crucial task in order to promote organisational learning. It is necessary for management to understand and act according to the insight that learning not only is a matter of cognitive, programmed learning, but also of emotions and behaviour. People have to understand new knowledge and feel that it is right to adopt new assumptions and routines – knowing, feeling and acting has to be balanced. A learning culture should not only depend on the organisation's learning infrastructure or investments of the Human Resource Department, but essentially on the trust members have towards one another.

(iii) The third central issue in managing organisational learning is to take into account different **learning types**, which will be discussed in chapter four. What type of problem-solving process makes sense in which problem situation? The correction of simple action-outcome deviations should be delegated as far down as possible in the organisational hierarchy. On the other hand action-outcome deviations can have crucial effects on the organisation's call for reflective learning processes, where assumptions and views are questioned.

(iv) Finally the management of **learning processes** is the backbone of organisational knowledge management. In order to promote the learning process of identification, a number of questions have to be dealt with in organisations:

- Who collects which information about the environment?
- Which environmental criteria are most important in the light of the corporate strategy?
- Which persons and groups have access to which information and knowledge?

Similarly the phase of creation needs specific attention by defining which knowledge (experiences) exists in core businesses and how this experience could be combined to generate new knowledge. Solutions have to be developed on how previous experiences are documented, e.g. memorandums, learning histories, data-warehousing etc. With respect to the diffusion of knowledge, it is necessary to analyse how information and knowledge flows through the organisation to promote important links. Questions to be answered here are for example:

- Channels available for communication processes (horizontal, vertical or temporal)?
- What type of communication dominates (instruction, discussion, and dialog)?

The modification and integration phase of organisational learning refers to the process how new knowledge is integrated into the organisation's memory. Therefore it is a prerequisite to question existing theories to reflect on the assumptions that are guiding peoples everyday behaviours and to modify these assumptions according to new insights. Finally even though new knowledge seems plausible it could be influenced by barriers, e.g. fear of committing mistakes or members may have adopted new knowledge, but the use thereof does not lead to behavioural changes. Attitudes may have changed, new insights developed, new operating standards proclaimed and still people do not behave accordingly. This is when organisational defences and culture of resistance may be the reason. Management should then question the implicit norms people react on as these blockades and pitfalls could influence the organisational learning process.

SUMMARY

The vast area of interest in organisational learning has created a diversified understanding of the concept. Organisational learning has borrowed from individual learning processes, which is believed to be very sophisticated as it involves aspects of human nature and interaction with the environment. Understanding the individual learning process is a good starting point, but it is not the whole picture. For example, organisational learning is not simply the collectivity of individual learning processes, but

should be seen as the interaction between individuals in the organisation, interaction between organisations as an entity, and interaction between the organisation and its contexts.

Capabilities embedded in employees cannot be classified by hierarchy, function or position and organisations need to remove impediments to assessing knowledge and competence. The organisation will need to develop capabilities to handle change and learn rapidly. Focusing attention on such skills and attitudes as agility, flexibility and speed will develop these capabilities. The organisation's success will finally depend on the speed at which it can generate, capture and disseminate knowledge and how this knowledge is used to develop capabilities that rivals cannot easily copy. This ability to create knowledge and to continue to learn from it can become a competitive advantage, because innovative knowledge developed today will become the core knowledge of tomorrow.

In conclusion, learning should be seen as a tool to maximise the transferal of information and knowledge to build individual and corporate capabilities. How well an organisation can build shared meaning and processes to reinforce collective identity will impact on the organisation's ability to learn, and requires the application of new knowledge within organisational practices. This implies that organisational learning cannot be reduced to individual learning, but the process cannot completely be separated from individual learning. Organisational learning integrates both the individual's contributions and organisational character in a well-balanced manner. However the quest for unique competitive advantage urges for a reconsideration of any approach that fails to place value on individual and organisational interactions and relationship. The organisation's capacity to learn to meet immediate performance deficiencies is then no longer sufficient to build unique competitive advantages.

Chapter 4

LEARNING APPROACHES

"The value of what you know can only be seen in what you do" – Klas Mellander

INTRODUCTION

There seems to be a lack of literature focusing on the impact of organisational learning on quantum leap innovation and creativity. Creativity and innovation are core organisational competencies in the new knowledge economy, while the ability of transferring learning into knowledge is a critical and valued organisational capability. Organisations relying on the traditional cost and differential advantages find it increasingly difficult to survive and succeed. A continuous improvement strategy is not necessarily beneficial to organisations operating in hyper-dynamic environments and organisations will have to expand its functions to focus on breakthrough innovations (Kim & Mauborgne, 1999). How quickly organisations can translate learning into outcomes, influences strategic success and requires strategic solutions. Argyris and Schon (1978) refer to "a continuous learning cycle and/or approach includes action, reflection, adaptation and further action to maximise the total impact". Redding (1997) views the effectiveness of learning approaches by the:

- **Speed of learning** – the pace and speed in which organisations are able to move through and complete the learning cycle will determine the opportunities available to learn,
- **Depth of learning** – the ability of organisations to learn. How much knowledge is used in each learning cycle?
- **Breadth of learning** – refers to the capacity for the organisation to utilise the learning or "how extensively organisations are able to transfer new insights".

These learning approaches occur (often spontaneously) on different subjects, stages and timings, depending on the organisation's challenges and is viewed by the speed organisations can innovate. The speed of the organisational learning approaches reinforces the need to view learning as a "loop"

that extends beyond the benign absorption of information for applied purposes, and requires the management of the mentioned components to maximise the total impact. Only recently did researchers start to view innovation as being core to the organisational learning and knowledge-creation processes (Nonaka & Takeutchi, 1995; Davenport & Prusak, 1998). However, innovation requires a high degree of pro- and inter-activeness as well as the incorporation of three organisational learning levels: single-, double and triple-loop learning

LEARNING LOOPS

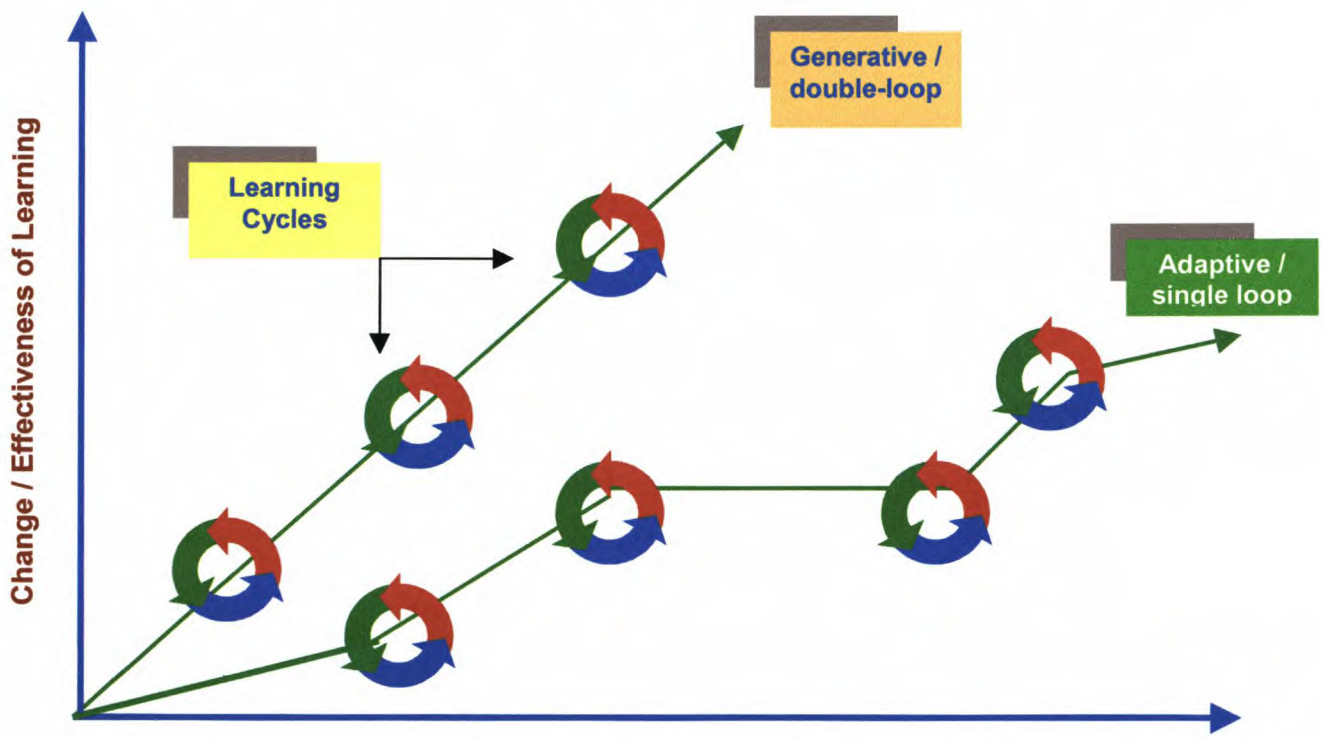
Argyris & Schon's (1978) single-, double- and Garratt's (1986) triple-loop learning reinforce the need to view learning as an approach that extends beyond the absorption of information as applied purpose. Argyris and Schon (1978) emphasise that organisational learning only occurs when new knowledge is translated into behaviour. The authors explain that organisational learning could be defined as "learning to learn and acquiring habit of thought". It is interesting to note that the learning-loop approach is problem-based learning, connected to life experiences.

Single-loop Learning

Argyris and Schon (1978) define single-loop learning, also referred to as adaptive learning, as "instrumental learning that changes strategies, actions or assumptions underlying strategies in such ways that leaves the values of the action theory unchanged". This type of learning provides the organisation with opportunities for greater success on process improvement. For example: quality control inspectors inspect a defect product. The information is conveyed to the production engineers who modify the production procedures to eliminate defects. Such feedback loops do not challenge basic system assumptions and lead to minor incremental changes. As illustrated in Figure 2 this causes spurts of improvements or change. Kim (1993) understands single-loop learning to result in know-how knowledge stored in the memory of both individual (in terms of routines and work practices or individual mental models), and organisational levels (in terms of organisational routines shared with other members' in the organisation). Single-loop learning relates to "doing things right" by detecting and correcting errors, without questioning underlying policies or processes.

Single-loop learning could occur when organisations decide to change specific strategies due to ineffectiveness, and demonstrates a high degree of re-activeness and responsiveness. Single-loop learning is valuable in a crisis or when the organisation still has faith in the underlying assumptions associated with the theory in action. There are times when quick fixes are all that is required, particularly in early mini cycles. However this is not a long-term strategy for success or serious organisational learning. The single-loop learning process analysis is limited to problems within defined parameters, and answers questions of how to fix the problem.

Figure 2 – Managing learning to promote single- and double-loop change



Source: Redding (1997)

Figure 2 also illustrates how organisational learning can be used to generate enhanced depth, speed and breath of learning (Redding, 1997). Learning is impacted by the specific context of the organisation and the knowledge generated and transferred. It is important to understand the difference between the organisation's ability to adapt and the organisation's ability to learn.

Double-loop Learning

Argyris and Schon (1996) defined double loop learning, also referred to as generative learning, as "learning that results in a change in the values of theory-in-use, as well as in its strategies and assumptions". Double-loop learning involves questioning values, beliefs and subsequent policies, in other words the underlying organisational systems are challenged and modified. Kim (1993) identifies double-loop learning as the conceptual understanding of an experience (i.e. to know why), implying that new best practices can develop through organisational learning

Double-loop learning is focused on both process and systems level (Redding, 1997), and assists organisational development through a sustained capacity to learn and change. However double-loop learning becomes much more than an intervention if it is controlled and targeted towards adapting actions to meet performance ends. Argyris & Schon (1978) regard transparency of knowledge as the most important condition for double-loop learning and consider unlearning of learning cycles to be vital. Neither of these points is easy to achieve. Process learning at the highest level embraces all phenomena that falls under the heading of change. In other words, process learning could be viewed as learning to understand single-loop learning. Double-loop learning also involves questioning organisational norms and values, which seem unchangeable, setting new priorities and conducting evaluations of these norms. This type of learning questions the "taken-for-granted" standards of doing things right and facilitates changes of existing processes, routines and values.

The limitations of double-loop learning, viewed by Nonaka (1995) is that it has a strong orientation toward organisational development, it "assumes implicitly that someone inside or outside an organisation knows "objectively" the right time and method for putting double-loop learning in practice". Is this a mechanistic view? On the contrary, double-loop learning is not a special or difficult task, but should be a daily activity within organisations. It could be said that organisational learning begins with double-loop learning and is a process by which organisations adjust to changes in their environment.

Both single- and double-loop learning lead to problem solving approaches, which involves the process of defining the problem, searching for alternatives, selecting the best solution, and follows a linear-sequential thinking pattern (Tatsuno, 1989). In terms of innovation, both levels of learning are connected to continuous improvement, and radical changes may occur through the accumulation of incremental changes, however,

- There is a certain degree of deficiency in terms of flexibility, pro-activeness and innovativeness, especially in business environments featured by hyper-dynamics, uncertainty and chaos.
- There is little evidence of creative input in the single- and double-loop learning approach, efforts are made towards how to make improvements based on existing product ranges, processes and systems.
- The dynamic changes in technology may have shortened the product life cycles, but holding on to current product ranges and systems may become a disadvantage in the real business world.

In conclusion, most current organisational learning practices are maintained at the single- and double-loop level, which relate to different degrees of change and change forces within an organisation's environment. In a stable environment there is less pressure and fewer incentives for organisations to change, the focus is directed towards detecting errors and correcting behaviour according to defined standards of "doing-things-right", in other words the single-loop learning approach will suffice. This process involves knowledge accumulation, dissemination and retention. In more dynamic environments, e. g. rapid technological development changes or shifting market demands, learning moves to a higher level and demonstrates a degree of pro-activeness, by questioning existing systems and processes, then single-loop learning is not sufficient. To maintain competitiveness, organisations need to challenge the "doing things right" routines by questioning why errors occur and how modifications, in terms of the organisation's underlying norms, policies and objectives (Argyris & Schon, 1978), should be implemented with the aim to get it "right first time". In a hyper-dynamic environment new product development and dynamic market changes require that new ideas be generated within a flexible and dynamic processes. An interactive learning approach involving groups

of people working closely together to search, refine, recycle, nurture and generate new ideas (Tatsumo, 1989) is required, rather than a linear or sequential process. To succeed, organisations need to switch to triple-loop learning.

Triple-Loop Learning

Triple-loop learning was first postulated by Garratt (1986) and Swieringa & Wierdsma (1992). Triple-loop learning, on top of both single- and double-loop learning, is the key to achieve flexibility and a higher degree of pro-activeness. Parallel concepts include "re-designing norms and protocols governing single-and double-loop learning" (Bateson, 1972), "learning to learn" (Michael, 1973) and "organisational unlearn" (Hedberg, 1981). The concept requires the learner to redefine old categories and develop new concepts and viewpoints, and to change standards of judgements. In the organisational context, triple-loop learning is about questioning existing techniques and systems by asking *where* the organisation should stand, and *how* to be creative and innovative to succeed in the marketplace. This approach differs from single-loop learning that asks what is wrong and *how* to correct and double-loop learning asking *why* it is wrong and *how* it could be prevented. This viewpoint is summarised in Figure 3.

Triple-loop learning involves constantly questioning existing products and system by strategically asking "where the organisation should stand in the future marketplace" and how to superpose organisational capabilities and competencies to create value in the target market. Triple-loop learning is accompanied by organisational ambition, wisdom and involves knowledge creation. The triple-loop approach incorporates:

- A high degree of creative input and organisational unlearning, it is an interactive and iterative process
- Use and incorporate single- and double-loop learning as the foundation.
- Involves knowledge creation and coupled with organisational creativity form the main reason for quantum leaps and breakthrough innovation.

- Tacit knowledge (Lam, 2000) and interaction between tacit and explicit knowledge (Nonaka & Takeutchi, 1995) critical to the triple-loop learning process.

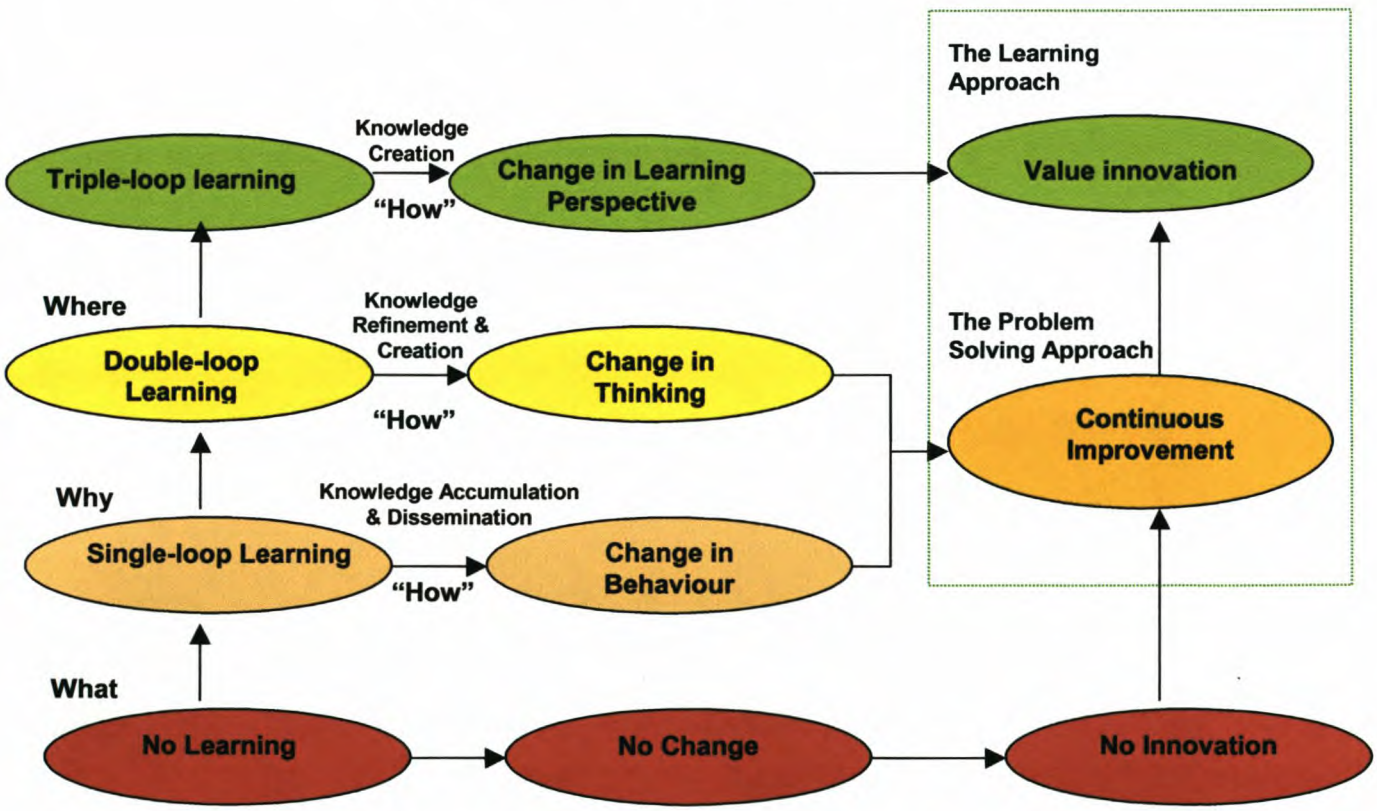
Argyris and Schon (1978) understand triple-loop learning (or deutro-learning according to the authors) as when an organisation "learns how to learn" in a continuous process of change and development. Critical questions are focussed on paradigm shifts and radical transition. Visionary leadership and long-term commitment are key to triple-loop learning and is what empowerment evaluation is about. The entire process from the organisation's mission to future planning builds the evaluation inquiry capacity. People engage in conducting their own evaluations, internalize the logic of evaluation, have buy-in concerning the findings and recommendations and learn to learn. On a meta-level triple-loop learning enables participants to critique each step of the learning or problem-solving process, ensuring the process is refined or transformed, to improve learning as a future need.

The St Gallen School of Economics in Switzerland (Gilbert Probst *et al,* 1998) interprets triple-loop learning as reflection, analysis and sense making on an organisational level. Argyris and Schon (1978) speak of a learning organisation when the organisation engages in a process of double-loop and triple-loop learning and suggest that most individuals appear to operate within this context. With triple-loop learning new learning strategies are invented and evaluated and could be defined as "learning to learn and acquiring habit of thought". It is when individuals or groups learn how to learn that the deeper thinking of double and triple learning is incorporated into daily organisational operations. Acquiring the abstract habit of thought and developing schematics for learning acquires a thinking ability, inquiry and judgement (Argyris and Schon, 1978). The thought process helps organisations to unlearn "old" habits, routines, inadequacies and discard them, and requires inquiry, evaluation, judgement and a thinking process to identify alternatives for current applications.

In summary the process of double-loop- and triple-loop provides management the opportunity to provide performance feedback to individuals regarding his/her work to avoid future mistakes. Organisational learning in the sense of double-loop and triple-loop learning implies that the

organisation has created a structure through which individual learning is permanently stimulated, documented and evaluated. It is this organisational structure by which organisational learning is differentiated from pure individual learning. In other words: organisational learning changes structures and not the people. Such a structure is only put in practice if organisational learning is not only a formal demand but also, a cultural phenomenon. This is when organisational learning becomes a pattern of shared assumptions that the organisation learns to solve problems of external adaptation and internal integration, which should be taught to new employees as the correct way. A schematic summary of the interactions and behaviour changes between the three learning loop approaches is illustrated in Figure 3 below.

Figure 3: The Learning-loop Approach



Source: Adapted from Wang & Ahmed (2001)

In this section it is emphasised that learning is a requirement for organisational learning and forms the basis of organisational capabilities. To move to the higher level of triple-loop learning, organisations need single- and double-loop learning, which involves continual improvement in process and

management techniques. Continuous learning is the process and framework for orienting not only individual actions towards agreed ends, but for shaping how individuals interact to generate new knowledge that can redefine ends or collective purposes.

COGNITIVE LEARNING PATTERNS

There is a stream of learning theorists that emphasise that the process of unlearning is characterised by change in cognitive patterns. These cognitive patterns may dissolve either when old events are perceived to have different outcomes, resulting in the perception that new information does not fit, which leads to a breakdown between the event and outcome. The event can then be restructured and involves not only behavioural adaptation, but also changes in deeper cognitive structures. Significant changes occur in relationships between the organisation and environment, necessitating more than a simple process of adaptation (Argyris & Schon, 1978; Fiol & Lyles, 1985). The organisation's frame of reference can only continue to develop if existing structures are changed and behavioural repertoires modified. New theories of action emerge, leading to the critical examination of values and norms, which in turn changes the underlying knowledge structure of the organisation.

A second stream of learning theorists emphasise cognitive processes as key determinants of individual learning (Bandura, 1986). Instead of focusing on behavioural changes, cognitive psychologists focus on changes in the state of knowledge, which creates the potential for changing behaviour. In the course of cognitive interactions with the environment, individuals create his / her own representations of the environment, based on experience, expectations, beliefs, and previously developed cognitive patterns. This approach centers on changes in potential behaviours and underlying cognitive structures. If this approach is adopted the learning potential is a function of individual insight and cognitive abilities, as well as intelligence and experience. Socially transmitted skills, motivational history, interest and value judgments then mould experiences. These factors exercise a strong influence on the individual's learning ability and organisational learning process.

Most authors agree that the process of restructuring behavioural rules, cognitive maps, or "reframing" is a difficult one. In most cases defensive routines have been built and fundamental rules developed to ensure that errors are ignored, not discussed, or the non-discussability thereof ignored. The process of unlearning could be seen as a series of "little deaths" at micro-level, old structures and ways of thinking are removed from the repertoire to make room for new structures. Unlearning makes it possible for new knowledge to be accepted, and for old structures to be changed.

Unlearning, learning and re-learning are important elements in the organisational learning process, the process demands unlearning as much as learning. Unlearning involves the process of restructuring past successes to fit changing environment conditions. Under any circumstances, unlearning is difficult. When members of an organisation interact with the internal and external environment, their perceptions of reality changes continually as new information is gained. During this process, stimulus-response chains are broken and re-formed and when this happens, the organisation has learned to adapt, by changing behaviour to align to existing goals. The stimulus for this kind of learning is the gap between objectives and outcomes. Deviations from given norms are corrected by a process of adaptation, redirection of behaviour towards existing goals and old theories of action have been changed (Argyris & Schon, 1978).

SUMMARY

Learning has been promoted in the corporate world as the means to transfer codified knowledge to individuals, teams and the organisation in order to continually improve productive outcomes. Learning contributes to performance improvement, and is an interactive process between individuals and organisations. Knowledge, generated through learning, is key to maximise and leverage knowledge assets. Learning takes information and knowledge held by people and orients it towards performance outcomes, making it a vehicle to ensure survival and future organisational success. The insistence on existing beliefs and methods inhibit learning and is often accompanied with a degree of organisational unlearning. In a sense, organisational learning is more about organisational unlearning in order to

create a quantum leap and requires the effective "blending" of creativity and radical innovation as a strategic orientation to sustained competitive advantage.

Organisations have difficulty in changing when successful, making the transition from unlearning to learning especially difficult. Learning from mistakes implies a focus on past behaviour and while efficiencies may still accrue, this approach is akin to walking backwards into the future. This is why "failure" is often a trigger for learning. Triggers such as a falling turnover, rising costs, financial deficit, technological failures, public criticism or leadership changes fuel the "unfreezing" process in which old ways of thinking and behaving are discarded and new ways accommodated. There seems to be general agreement that organisations that do not learn, or make progress, keep repeating current behaviour patterns. Since success tends to preserve existing knowledge structures and behaviours, organisational members and leaders lack the means to free themselves from these "old" knowledge structures. For the organisation the implementation of change is through the realisation that all processes are learning processes. The speed of the organisational learning cycle increases as organisations learn to unlearn, learn and relearn.

Most organisations tend to do well with single-loop learning, but few are effective at double- and triple-loop learning (Dodgson, 1993). Organisational learning, in the sense of single-loop- double-loop, triple-loop learning, implies that organisations need to create a structure and culture, through which individual and organisational learning is permanently stimulated. What is important is management's understanding that the application of learning loops can make a difference in the competitive environment and constitute the basis of an organisation's competitive advantage. Researchers have linked the learning loop concepts to individual competence and organisational capabilities. Underlying is the idea that individual learning and competence can be harnessed positively to produce collective learning. Developed routines are constantly revised and updated into best organisational practices in an infrastructure supporting the collection, storing and distribution of new knowledge, experience and practice (Teece, 2000). Organisational learning resulting in newly developed work practices and

routines can be regarded as one of the means organisations can improve performance and sustain competitiveness in changing environments (DiBella et al, 1996).

Chapter 5

ORGANISATIONAL KNOWLEDGE THEORIES

"The only thing that gives organisations a competitive edge, the only thing that is sustainable – is what it knows, how it uses what it knows and how fast it can learn something new". Davenport & Prusak (1998)

INTRODUCTION

Knowledge is not a new phenomenon. The debate about what "knowledge" is has a long history in the social and natural sciences. The paradoxical nature of knowledge is best represented by the fact that "we cannot always know what we know" (Polanyi, 1958). Knowledge is a word often used very loosely. Researchers have developed categories, typologies, structures, levels and other means of defining knowledge, while others work without definitions and assume the meaning of knowledge, which is part of the knowledge paradox. The growing consensus on the importance of knowledge does however not concur with a growing clarity on what the concept really means; fact is the knowledge concept is becoming more and more fuzzy. As a result there is a tendency to continually broaden the scope of issues covered by the notion of knowledge: codified data, mental material, unconscious assumptions, all kinds of skills and practices, talents, tacit feelings, emotions, routines, culture, norms and standards etc. Drucker (1993) warns "knowledge makes itself constantly obsolete, so that today's advanced knowledge is tomorrow's ignorance. The knowledge that matters is subject to rapid and abrupt shifts" (Drucker, 1993). However Drucker also states "what does make a business distinct and what is its particular resource is its ability to use knowledge to social, economic and managerial advantage" (Drucker, 1993). Knowledge is therefore seen as a key source of competitive advantage and innovation in organisations.

In this chapter the question of "what is knowledge", the definitions and taxonomies of knowledge is highlighted and discussed. Authors such as Drucker (1993) and Nonaka et al (1995) emphasise that

knowledge is recognised as the differentiating factor and source of competitive advantage and that knowledge is an elusive and intangible, but critical element for organisations to sustain competitive advantages. Knowledge is important to organisations, but questions such as "do organisations recognise the benefits forthcoming from knowledge"? Or "what is the definition of a competitive advantage"? must be answered beforehand. The management of knowledge should no longer be an effort of storing and gathering of knowledge in whatever form.

WHAT IS KNOWLEDGE?

The understanding of knowledge is in sharp contrast with the postulated high importance of knowledge as a sustainable competitive advantage resource. It is widely agreed that knowledge is a major factor for corporate success and has been attributed a high economic value. Barney (1991) defines knowledge as a resource that is valuable, rare, inimitable, un-substitutable and the ultimate source of sustainable competitive advantage. Popular keywords like the knowledge intensive corporation, or the knowledge society (Castells, 1996) not only point to the high importance given to knowledge, but also to the increased importance of knowledge workers (Drucker, 1993). Knowledge held by individuals or by organisations have a capital value that can be managed, evaluated and manipulated. Knowledge has a value that is not determined by possession, but through processes impacting on the acquisition, transfers and expansion of the organisation's knowledge requirements to promote organisational agility and responsiveness.

Alavi and Leidner (2001) identified the following views of knowledge:

- Knowledge vis-à-vis data and information. Some authors, most notably in the Information System community, address the question of defining knowledge by distinguishing between knowledge, information and data (Fahey and Prusak, 1998; Castells, 1996, Speigler, 2000).
- Knowledge as a state of mind - where knowledge is described as "a fact of knowing" with the knowing being a condition of "understanding gained through experience or study; the sum or range of what has been perceived, discovered or learned" (Schuber *et al*, 2000).

- Knowledge as objects (things) that can be stored in knowledge repositories (organisational memories) and manipulated (Stein and Zwass, 1995; Wijnhoven, 2000).
- Knowledge as a process of simultaneously knowing and acting (Brown and Duguid, 2000, 2001).
- Knowledge as resource and capability, where knowledge is viewed as a resource and capability with the potential of improving organisational performance (Carlsson *et al.*, 1996)

Knowledge also has a social value - colleagues value its as possession, and organisations value it for its strategic capacity to enhance productivity in the monetary value sense. Existing writings explore the perspective on knowledge application in three broad levels: Individual / group, organisational and societal.

At individual and group interaction level:

- Knowledge communities
- Communities of practice;
- Knowledge alliances, and
- Learning communities

(Argyris, 1978; Wenger & Snyder, 2000; Bowles, 1999)

At organisational level:

- Knowledge assets
- Knowledge management
- Organisational learning
- Corporate intelligence
- Corporate memory
- Corporate wisdom, and
- Knowledge innovation.

(Nonaka & Takeutchi, 1995; Sveiby, 1997; Edvinson & Malone, 1997, Stewart, 1997 & Allee, 1997)

At the wider societal level:

- Knowledge based economy

- Learning society
- Knowledge economy, and
- Knowledge society.

(Nonaka & Tackeuchi, 1995; Castells, 1996)

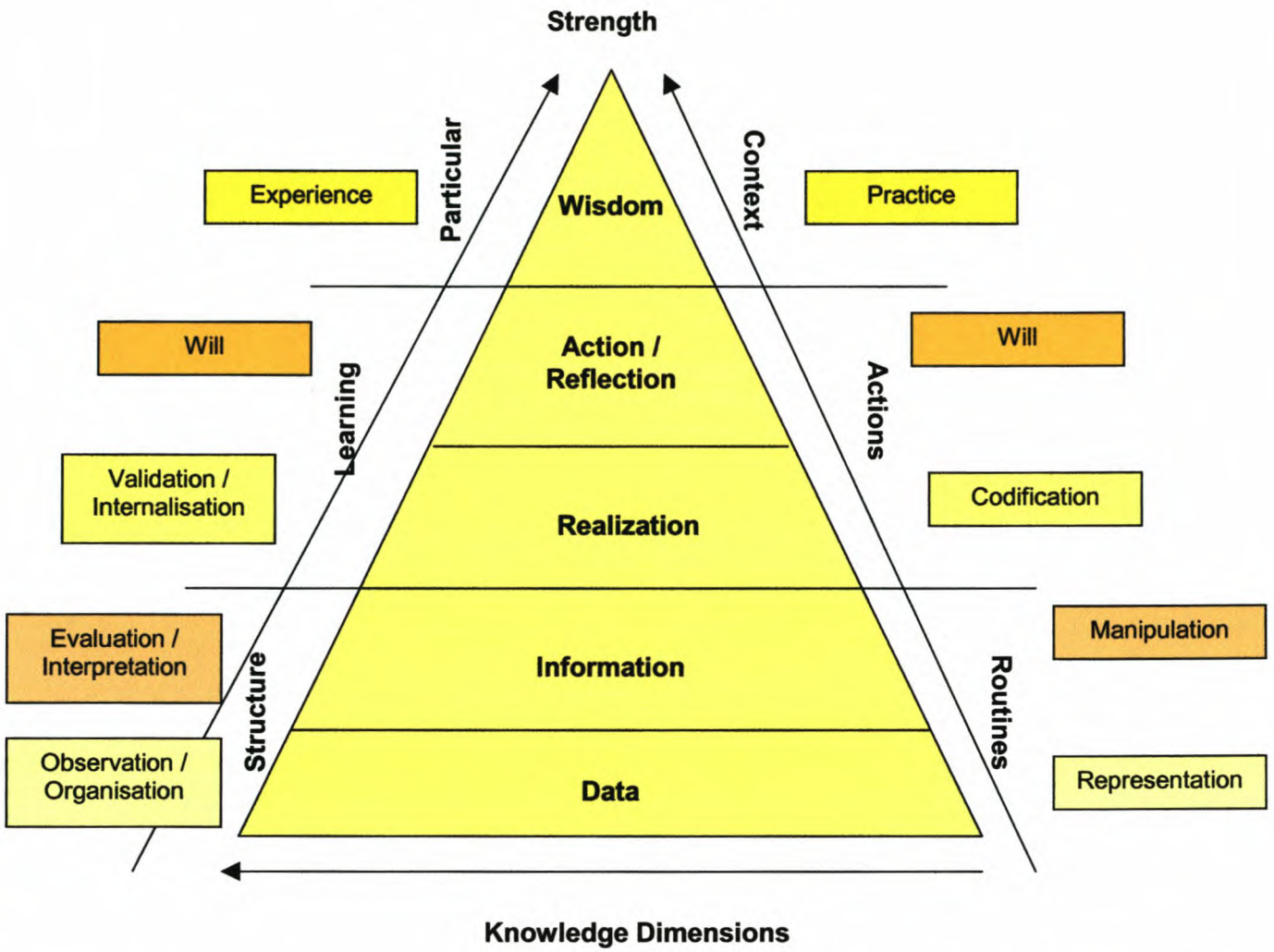
As the conception of knowledge is vague and if a reflection on knowledge is done, two different versions seem to emerge: the first refers to the information theory, and in the second version knowledge appears as a compilation of features which potentially contribute to successful action. In the information theory (Castells, 1996), knowledge is differentiated from information, data and signs with knowledge being the final point in the hierarchy. Knowledge is then intimately connected with a specific context. According to this understanding knowledge refers to a combinative process which is merely a formal conception. The term's knowledge and information are often used inter-changeably in literature, but a distinction is helpful. The distinction between knowledge and information is being addressed in this chapter.

The second version of knowledge is not interested in the differentiation between knowledge and information; it rather focuses on potential determinants of successful action. Knowledge is used as an umbrella notion, which is supposed to cover human skills and practices. The knowledge definition given by Davenport & Prusak (1998) is characteristic for this pragmatic and comparative understanding of knowledge: "Knowledge is a fluid mix of framed experiences, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers."

DEFINITIONS: KNOWLEDGE AND KNOWLEDGE TAXONOMIES

There are numerous definitions and taxonomies of knowledge that contribute to theory from a variety of perspectives. The flow from data to wisdom is illustrated in Figure 4 (Kakabadse & Kouzmin, 2003)

Figure 4: Knowledge Triangle



Source: Kakabadse & Kouzmin (2003)

- **Data** represents observations or facts out of context that are not directly meaningful (Zack, 1999).
- **Information** results from placing data within some meaningful content, often in the form of messages (Zack, 1999).
- **Realization** ("knowledge") can be conceived of information put to productive use. Knowledge, as a "justified true belief", is that which people believe and value on the basis of meaningful and organisation accumulation of information (message) through experience, communication or inference. To obtain information the value of information needs to be assessed – which requires action.

- Through **action and reflection** wisdom is gained – knowing how to use information in any given context requires wisdom.
- **Wisdom** is a mode of symbolic processing by a highly developed will. It is a dialectical integration of all aspects of the personality; including affect, will, cognition and life experience.

The concept of knowledge implies development and growth, and each stage of the knowledge dimension activities must be performed to release knowledge. From observing and organising data a learning process is started – from structured to particular knowledge. Through the evaluation and interpretation of information one moves to a realisation of knowledge that requires validation and internalisation, to be acted and reflected on in order to gain wisdom, which grows with experience. At the same time, starting from routine data representation, manipulation of information, codification of realizations and the will to act and reflect, wisdom is achieved within particular contexts that require strength to sustain.

Knowledge is seen as a justified personal belief that increases an entity's potential for effective action. In this definition, an entity may consist of one or more individuals (groups or organisations). Furthermore availability of knowledge may not necessarily lead to effective action, but only to an increase in potential actions (Huber, 1991). The definition further suggests that knowledge be initiated in individuals or groups. Knowledge is the information proposed in the minds of individuals through a process of deliberation, learning, and thought. Some authors define information as data that has been given structure. Data is in turn refers to symbolic representation.

Knowledge Taxonomies

A discussion on knowledge taxonomies is important because different types of knowledge have different implications. A frequently cited taxonomy of knowledge developed by Nonaka & Takeutchi (1995) is based on Polanyi's (1958) discussion of tacit and explicit dimensions of knowledge. Nonaka & Takeutchi (1995) identify two types of knowledge: tacit and explicit.

- **Tacit knowledge** is defined as unarticulated knowledge rooted in action and experience, is situated in context and is subjective and experienced-based.

- **Explicit knowledge** refers to articulated knowledge in symbolic form – spoken or written words and is more objective, expandable, compressible, substitutable, transportable, diffusive and sharable.

It is important to note that tacit and explicit knowledge is mutually constituted, not mutually exclusive. Knowledge can be seen as the result of a dynamic knowledge creation process where every knowledge element is bearing both tacit and explicit codes, which implies context dependency in a broad sense. In general, given the situated and unarticulated nature of tacit knowledge, the rate of transfer is slower than the transfer rate of explicit knowledge. Furthermore tacit knowledge is best transferred through collaboration, shared experience and interpersonal interaction over time, while explicit knowledge may be effectively transferred through "leaner" interactions and communication channels. Effective transfer of knowledge, from its source to its intended recipient, is only the first step toward effective organisational knowledge utilisation.

IMPORTANCE OF KNOWLEDGE TO ORGANISATIONS

In today's knowledge-based economy there is a fuller understanding of the growing value of knowledge as an in- and output directly relating to intellectual capital vis-a-vis real estate, plant and equipment, financial capital and development of new techniques and technologies. Organisations are changing the way they compete and a key element of success is the incorporation of knowledge into core business strategies. Researchers emphasise that an organisation's competitive advantage flows from the ability to manage unique knowledge resources (Barney, 1991; Teece, 2000). "When markets shift, technologies proliferate, competitors multiply, products become obsolete almost overnight, successful companies are those that constantly create new knowledge, disseminate it widely throughout the organisation, and quickly embody it in new technologies and products" (Nonaka &

Takeutchi, 1995). This led to the idiosyncratic that knowledge is valuable, rare, immobile, and organisations should exploit knowledge to create competitive advantages (Barney, 1991).

In order to benefit from knowledge the organisation must be able to recognise what it is looking for. One of the most interesting aspects of knowledge in literature is seeing what is not said. Literature does not, for example, say what it understands to be knowledge, although constant reference is made to the fact that the creation and implementation of knowledge is why organisational learning is created. Garvin (1993) states that a successful learning organisation is one that has, "become adept at translating new knowledge into new ways of behaving". Organisations actively manage the learning process to ensure that learning occurs by design rather than by chance. It is interesting to note when the need for learning arises, the uses of knowledge are listed as: how to use knowledge actively; conditions under which particular knowledge is applicable and the relevance of knowledge to specific and general contexts. Most of the times the term knowledge is accepted as a given and already part of a shared mental model (Senge, 1990), and it is assumed that the reader has the same understanding of knowledge as the author.

The question is whether and if so how organisations can appropriate and use the knowledge held by individuals in the organisation as an organisational asset. Literature highlights the experiential nature of organisational learning and stress that it should be seen as a continuous incremental build-up process, which is at odds with transformational knowledge. Lyles and Schwenk (1992) stress two differences between the knowledge structure (referring to the shared beliefs at organisational level) and organisational culture. First, whereas culture refers to the "emotional elements", the knowledge structure is narrower, dealing with "goals, cause-and-effect beliefs, and other cognitive elements"; and second it is "more clearly linked to an organisation's strategy for survival and more subject to change" Lyles and Schwenk (1992). Changes in the shared belief, a result of mental models (Senge, 1990), will occur as a result of:

(i) the impact of the interpretation of environmental events

(ii) results of past organisational actions (experiential learning);

(iii) the influence of key decision makers;

(iv) the dominant coalitions with the organisations;

(v) political processes within the organisation;

(vi) a social process (Wenger, 2002); and

(vii) combinations of the above (Lyles & Schwenk, 1992).

With the above in mind and if knowledge is defined as shared beliefs, does this not imply subjective views of knowledge, this is at odds with the way knowledge is used to make "rational and objective" decisions within the organisation.

Nonaka and Takeuchi (1995) answer the question to "what is knowledge?" by identifying the conceptual difference between eastern and western approaches to the definition of knowledge. The authors state that western philosophy has generally agreed that knowledge is "justified, true belief". This would then become the shared understanding that pervades "communities of practice" that the western world is socialized within. It is accepted that we know what knowledge is, that it can be recognised and see no need to test it. This ability to identify truth is supported by the western acceptance that objectivity can be split between the knowing subject and the known object. Eastern philosophy does not have this split but sees everything as a continuation of everything else and accepts that by its very nature a system will be subjective and self-referential; what is seen may not be "truth" only the individuals understanding of the "truth".

This could mean that if information were considered to be true it would be accepted as knowledge without challenge. Further, it could mean that if information were believed to be knowledge, it would be accepted as truth without further verification. If this is so, then all learning entering an organisation is accepted as a form of knowledge and truth to be acted upon unchallenged. Knowledge will only be recognised as untrue when something goes wrong – the construct of knowledge being applied is by its very nature reactive. Kim (1995) says "true knowledge is more than information; it includes the meaning or interpretation of information, and a lot more intangibles such as the tacit knowledge of

experienced people that are not well articulated, but sometimes determines the collective organisational competence". What we see here is that if the terms are not clear, and knowledge is not well defined, organisations will be satisfied if they recognise there is more information entering the system. It will then be assumed that either this is knowledge, or that it will become knowledge. This assumption may lead organisations to set learning targets where members of the organisation are seen to be learning in some pre-determined way. If the targets are information, not knowledge, the advent of organisational learning may not occur.

KNOWLEDGE AS A SOURCE OF COMPETITIVE ADVANTAGE (CA)

The idea of a sustainable competitive advantage surfaced in 1984, when Day suggested types of strategies to "sustain competitive advantage". The actual term emerged in 1985 when Porter discussed the basic types of competitive strategies an organisation can possess, e.g. low-cost, differentiation etc. Interestingly, Porter did not present a formal CA conceptual definition. Barney (1991) came closest to a formal definition: "A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of the strategy."

Day and Wensley (1988) focused on two categorical sources involved in creating CA: (i) superior skills, the distinctive capabilities of personnel, and (ii) superior resources, the more tangible requirements for advantage that enable organisations to exercise its capabilities. The competency and organisational concepts were discussed in chapter three of this paper. Barney (1991) states that not all-organisational resources hold the potential of CA's; they must possess four attributes: rareness, value, inability to be imitated, and inability to be substituted. Hunt & Morgan (1995) state that comparative advantages in resources translate into a position of competitive advantage only if the criteria proposed by Barney (1991) are satisfied and the offering has perceived marketplace value. Prahalad and Hamel (1990) suggest that organisations combine resources and skills into core competencies in such a way to achieve a unique competence or capability.

Organisations often use financial indicators to measure competitive advantage, although these measures may not fully reflect perceptions. In response to the limitations of measuring competitive advantage several authors have encouraged researchers to develop richer measures of the theoretically important construct (Barney, 1991; Day and Wensley, 1988). Different and better measures of sustained competitive advantage incorporate both financial indicators and other more qualitative measures. Hall (1993) argues that the capability differential is the foundation on which the sustainability of competitive advantage rests.

The question remains "what role does knowledge play in providing organisations with a competitive advantage"? Organisations are searching for competitive advantage sources and different, and in part contradictory, views have emerged on how to gain and sustain competitive advantage. The different views of knowledge lead to different conceptualisation of knowledge and its role within the organisation. For example, the resource-based view identifies knowledge as the starting point of resources and capabilities. This view explicitly emphasise the links between knowledge, the management thereof and the organisation's performance. In many cases it is not the knowledge per se, than the organisation's ability to effectively create, share and employ new or existing knowledge to solve problems, make decisions and take actions that forms the basis for competitive advantage.

SUMMARY

The competitive advantage opportunity enabled by knowledge is potentially groundbreaking for many organisations. Although academics and scholars have addressed a variety of knowledge issues, the take-up by industry has been slow. The knowledge debate is focusing on the generation and use of tacit knowledge, opposed to the transfer of explicit knowledge. The shift of emphasis from explicit to tacit knowledge overlooks the issue of how explicit knowledge interacts. The constructs of knowledge have the potential for wider application and further research. In particular, the need for enhanced understanding and models of how essential non-transferable knowledge can be generated to facilitate knowledge generation.

Organisational success with regard to learning and use of knowledge is often defined in term of the relationship between performance outcomes and targets. As targets change so does the definition of success. However, what does not change is who sets the targets. Organisations have problems in overcoming competencies developed during earlier processes. Once a set of ideas are in place they will be hard to replace, even when an attempt is made to do so. Organisational memory can be very long and often success is assumed to result from managerial actions which could be repeated, even if it is coincidence. Once an outcome has been attributed to a reason (accurately or not) it will become a fact and the definition is set within the process. Thus random actions have now become successful / unsuccessful procedures. These factors imply that although there is a stated desire for new knowledge, in fact it is unlikely to happen.

In the struggle to improve and innovate, organisations fumble towards better methods with only partial understanding of their own human capabilities and technological opportunities. Managing knowledge is not the same as managing human resources – it is more multi-faceted than simply managing people; it also involves managing intellectual property rights and the development and transfer of individual and organisational know-how (Teece, 2000). Issues such as learning capacity, rooted in education, experiences, social, professional, structural and cultural contexts, equally need to be addressed (Teece, 2000). Nonaka & Takeutchi (1995) point out that "management scholars today consider knowledge and the capability to create and utilise knowledge to be the most important source of an organisations sustainable competitive advantage".

Chapter 6

LEARNING AND KNOWLEDGE BARRIERS

"An organisation is a body of thought, thought by thinking thinkers" - Karl Weick (1979)

INTRODUCTION

Corporate culture and structure directly impact organisational performance, ranging from leadership effectiveness to business strategy, operational success, human resources, decision-making processes, customer services, marketing and sales, organisation structure and R&D. Culture directly contributes or detracts from the bottom line and failure to take the organisation's culture and structure into account when creating, sharing and using knowledge would be fatal. It is instrumental for management to understand the barriers to how knowledge, culture and structure interact; these are the most intangible elements any manager must deal with. It is not surprising to find that the terms – knowledge, culture and structure – are used inside most organisations in multiple ways to mean many things. Without definitions these terms become buzzwords, promoting "muddy" and ineffective thinking. To align the organisation's culture and structure with knowledge objectives, there must be a shared understanding of the terms, if only so progress can be measured.

WHAT IS ORGANISATIONAL CULTURE?

The culture of an organisation includes a vision, reality and definition to make it useful. Jeanne Kirkpatrick, former US ambassador to the UN, defines culture as follows: "culture includes the entire symbolic environment. Culture defines reality: what is, what should be, what can be. It provides focus and meaning. Culture gives us values and standards of values." Like the concepts of organisational learning and knowledge has culture been defined in many ways. Although there is no widespread agreement in literature on exactly what culture is, there is some consensus that organisational culture can be described in terms of values, norms and practices. In a simplistic definition cultures can be

defined as the set of values, belief systems, ethical and moral principles shared in organisations. Culture also comprises of human behaviour, standards, procedures, and other initiatives (either conscious or unconscious initiatives in cultural context) for how to make the organisation function professionally and socially. Based on these grounds, how people co-operate and take decisions, the business culture becomes the alpha and omega for success or failure. Arguably the most important component of organisational learning is its culture, consisting of values, attitudes and beliefs that steer actions and behaviour of individuals making up the organisation. The culture existing within the learning organisation places great emphasis on learning and use of knowledge, creating an atmosphere of trust within which employees feel empowered to experiment with new business approaches, resulting in core competencies.

Culture can be found on different organisational levels. Values are deeply embedded in tacit assumptions difficult to talk about, are an ever present and powerful force shaping behaviours, but are sometimes too complex to change directly. Norms and practices, on the other hand, are directly observable and easier for employees to identify and are the most valuable symbols of culture. Norms and practices provide the most direct levers for changing behaviours to support knowledge objectives. Changing behaviours is the most direct way to alter organisational norms. On the other hand, values should not be the focus of change efforts, unless senior management is personally driving the implementation of a knowledge strategy, believe strongly in the need to change fundamental knowledge-related values, and are willing to lead a long-term culture change project (three to ten years). Therefore the most direct way to change behaviours regarding the use of knowledge is to change the practices that generate them. New behaviours resulting in new practices will change norms over time, which will provide long-term support for more effective knowledge use.

An often-overlooked phenomenon is the role of subcultures in shaping organisational behaviour. Subcultures consist of distinct sets of beliefs; norms and practices exhibited by specific groups in the organisation, e.g. R&D, marketing & sales, engineering, manufacturing, business units, etc. Subcultures have characteristics that distinguish them from the organisation's overall culture, as well

as from other subcultures. For example, R&D values may seem focused on product features to the detriment of marketability and profitability, while Finance appears to value controlling costs. Organisations have both an overall culture and multiple subcultures, which need to be aligned to obtain synergy.

Interaction between Culture and Knowledge

Most managers recognise intuitively that organisational culture is relevant in how knowledge is created, shared and used within organisations. De Long (1997) mentions that "until managers can articulate why and how culture impacts an organisation's ability to leverage knowledge, the fit between existing organisation and knowledge objectives cannot be recognised, nor can management design a strategy to reshape culture." De Long (1997) highlights four ways how culture and knowledge interact that are important for management to understand.

- **Culture shapes assumptions about what.** Culture, and particularly subcultures, heavily influence what is defined as useful, important or valid, or if knowledge is important at all to the organisation. Some cultures will only value "objectified" knowledge embedded in processes and systems, while others will recognise and favour knowledge that is the product of social interaction. These different views lead to miscommunication and conflict as subcultures apply different criteria in judging valid knowledge. Culture defines not only what knowledge is valued, but also what knowledge must be kept inside the organisation to support core competencies, and what should be transferred, or shared to create a strategic advantage. Culture plays a role in making these decisions.

- **Culture mediates the relationship between individual and organisational level knowledge.** Culture embodies the unspoken rules about how knowledge is to be used by organisations and individuals. Culture legitimates what knowledge belongs to the organisation and what knowledge remains in control of individuals. Unless management understands the current distribution of knowledge, and how the strategy proposes to change it, altering behaviours around knowledge

use becomes problematic. Questions that could surface if culture is viewed as the mediator between individual and organisational knowledge include:

- Who are the organisation's most valuable experts?
- To what degree do individuals trust the organisation with their knowledge?
- What strategically critical knowledge is embedded in processes and systems and what knowledge resides in people?

If culture is recognised as the mediator between individual and organisational-level knowledge, then the importance of renegotiating norms around knowledge sharing, ownership and access becomes more evident. Whenever knowledge management initiatives threaten to change patterns of knowledge use and sharing, management must address the following questions:

- What practices need to change to reinforce more collaborative knowledge use?
- How will the current culture facilitate the proposed redistribution of knowledge?
- What new behaviours must leaders and management exhibit to communicate a shift from valuing individual to collective knowledge?
- Given the current level of trust in the culture, how realistic are expectations for changing patterns in individual-level sharing?

- **Culture creates a context of interaction that determines the value derived from knowledge.** When knowledge is viewed as a product of social interaction, instead of an object (e.g., patent, report, software program), then culture becomes even more central in understanding how to leverage knowledge, because it creates the context for interaction in which knowledge is created, shared and used. For example, where lessons learnt are not shared across projects, a group's valuable experiences or results are unlikely to be shared with others, even though technology makes it possible to do so, the added knowledge value is lost to the organisation. In organisations where interdependent functions, e.g. R&D and manufacturing, are not expected to continually share knowledge and collaborate, and where no routine practices

exist to do so, there is no context for interaction to support knowledge sharing. The impact of culture on the interaction context can be assessed in at least three dimensions: (a) patterns and qualities of vertical interactions (e.g. boss/subordinate); (b) patterns and qualities of horizontal interactions; and (c) general behaviours rewarded or punished that affect knowledge creation, transfer and use.

- **Culture shapes the organisation's reaction to new knowledge.** An organisation's culture shapes how new organisational knowledge is captured, legitimated or rejected. The dynamics of this process represents a special problem for organisations that are regularly confronted by competitive and technological changes threatening survival. Organisations must be able to capture, validate and distribute new knowledge fast enough to change strategic direction and resource allocations, if they are to prosper in turbulent competitive environments. The question for management is: "What are the characteristics of a culture that will help the organisation rapidly interpret and distribute new organisational knowledge to enhance decision making and performance?"

Management must remember that new knowledge does not arrive in the organisation prepackaged, or validated for use without discord, or that an increase in knowledge, like an increase in information, will reduce uncertainty or increase control. Because knowledge is changing reality, it needs to be tested and evaluated based on its potential and applicability in a particular context. Harvey and Denton (1999) lend further support to the importance of culture, by saying: "to compete globally in a business you need to be rich in technology, and to be rich in technology you need knowledge and a culture that prizes knowledge". A major mistake of many organisations is in believing that their organisational culture is invisible to the marketplace. In reality, it is quite transparent to customers, investors, and the larger marketplace. Culture is about behaviours and attitudes. In an age of radically changing business conditions, the use of knowledge reflected in an organisation's culture might either serve to be the black hole or a strategic resource to ensure competitive success.

In this paper the importance of knowledge has never been disputed, but today the idea of managing knowledge has not been in tie with traditional management theories. It is clear that organisations must find ways to manage the knowledge they possess in order to succeed. This is an important challenge facing organisations to transform knowledge into value. It is important for organisations to create a culture that fosters knowledge, because unlike material assets, which decrease as they are used, knowledge assets increase with use (Davenport & Prusak, 1998). It is crucial to share knowledge since "ideas breed new ideas, and shared knowledge stays with the giver while it enriches the receiver" (*ibid.*).

ORGANISATIONAL STRUCTURE

A common element in defining an organisation is that it consists of a group of people working towards common goals. Organisational structures and descriptions of roles have provided the glue or cohesion between individuals and the organisation. Identification of roles in terms of competencies or skills is grouped within solidified organisational structures and proves both consistent of purpose and organisational activities. There is considerable evidence in literature that traditional hierarchical and bureaucratic organisational structures, heavily reliant on rules and procedures, hinder development and transfer of knowledge by stifling initiative, risk taking and innovation. Furthermore the different levels and rigid horizontal and vertical divisions in a hierarchical structure hamper the building, diffusion, co-ordination and control of knowledge. Knowledge sharing is increasingly distorted by passage through hierarchical levels and by the need of cross-functional boundaries. The solution to these problems comes in the following forms:

- A **flatter organisational structure** with reduced cross-functional boundaries. Conversely organisational knowledge must be holistic to ensure the integration of specialist knowledge.
- **A matrix structure** is another way of addressing cross-functional project teams or task groups and ensures knowledge-building and learning processes.

  Network organisational structures are perhaps the most appropriate for supporting a learning culture as there are fewer hierarchical features. Network structures also permit crossover of

organisational boundaries and may include the collaboration of businesses. The concept of "learning communities" is a popular example of organisational practices where individuals cooperate across organisational boundaries through learning partnerships and sharing of knowledge to achieve mutual advantages (Wenger & Snyder, 2000). Within these communities narrative knowledge result from activating, transferring and evaluating problem-specific situations (Orr, 1990; Brown & Duguid, 2000). Within the communities experiences are transferred and knowledge generated.

Two opposing views in literature seem to be that learning and knowledge can be defined as either:

- **Inclusive in organisational structures** – i.e. knowledge and learning can be tied to strategic purposes and occur as part of the functioning of an organisation. The organisation adopts a systematic approach to learning and use of knowledge is tied to performance outcomes. Supporting this concept is the development of learning organisations where knowledge and learning are meaningful on organisational levels and can be managed by the organisation to achieve specific strategic outcomes.
- **Exclusive to organisational structures** – this typically involves debate on organisational learning and learning communities where knowledge development grows out of individuals and communities that are not limited to organisational structures. This view is supported by the idea that knowledge and learning can best be described and managed with a focus on the source and how it exists in networks that are not tied down by organisational rules, practices or boundaries. Such an approach also argues that individuals can choose paths to learning and source knowledge that holds strategic value for an organisation. These paths to learning and knowledge may reside beyond workplace boundaries and systems. Some forms of knowledge assets may become available if an organisation ties learning and knowledge management to set actions, processes and outcomes.

Design of organisational structure is perceived to be a sub-component in strategy implementation, within the dominant paradigm of strategy management. Proponents of the classical management

design school argue that pre-requisite organisational conditions, to maintain flexibility, are structuring the assignment of duties and responsibilities to employees. Organisational structure is considered to be modifiable and is prevalent to let structure accommodate strategy. The structural characteristics of organisations must fulfil the mission of nurturing learning and knowledge sharing to take precedence over the design of structural features.

The common feature for new innovative forms of structure is the emphasis on how the interplay of tacit and explicit knowledge can be acquired, disseminated, shared and interpreted at different levels through various organisational mechanisms. Effective knowledge creation demands the facilitation of the learning process at organisational levels, structuring should be arranged in such a way to incorporate the ideas of individual members. The effectiveness for knowledge transfer in such a transformation process will be affected if deep-rooted knowledge is barred from participation. Organisations should be, formally or informally, structured to maximise the benefits of individual as well as organisational learning.

Generally organisational structures are not self evident on how to manage knowledge. Zack (1999) points out that the intangibility of organisations could result in obscurity of knowledge and will become difficult to comprehend. Knowledge will then be an underdeveloped resource. The appropriate internal organisational structure (Zack, 1999) provides conditions to create and harness knowledge but does not secure that organisations are fully utilising knowledge investment. According to Sveiby (1999) the internal structure of an organisation has one origin "the competence of people", e.g. the knowledge itself which has to be taken into account.

SELF REFERENTIAL FRAMEWORKS

A third and often less visible organisational barrier is the question that emerges as to whether, in a self-referential target setting framework, there can be any new knowledge or divergent thinking. In a self-referential framework measurement is against efficiency, which is internally defined and encouraged by management, with the result that targets are being set that confirm what is already

known. These frameworks create information as the organisation sees the need for it and reconfirm what is already known. In line with the western approach of knowledge, self-referentiality shows that organisations fail to detect errors and decision-making may be flawed. "Rather they adapt to an environment they themselves have participated in constructing and to which they have conditioned others" (von Krogh & Vicari, 1993). However in the eastern knowledge philosophy it is accepted that organisations can be self-referential. The common ethos will ensure that all employees are learning and using the same ideas, which is contradictory to the theoretical assumption on organisational learning, where individual or group learning pro-actively lead to new behaviours and changes gained via the learning process.

In a self-referential framework learning and use of knowledge becomes a self-centered activity, rather than a shared ideology, and training and development is seen as a form of control rather than employees managing their own learning. In the self-referential framework two issues come to the fore: (i) that new knowledge comes from within the current mindset, and (ii) that the responsibility to move forward is seen as part of management's job. If there is a clear dominant coalition of power from top management it will inevitable frame what others within the organisation learn, the power relationship will act as a filter to set informal targets, to please senior management. This may lead to the fact that more of the same information is being moved around or recycled, with little or no new knowledge created, shared or used, undermining the possibility to gain competitive advantages.

Organisational learning is said to transform the organisation and implies not merely adding incrementally or using what organisations already know. The need to promote divergence in order to create innovation is widely claimed and is an important reason for promoting new organisational knowledge. However, at the same time there is a desire to develop collective vision and effective empowered teams. To achieve these, emphasis is placed upon shared vision and collective culture through training and development. This is one of the problems. In most organisations individual development is set by the identification of training needs, and setting up of plans to achieve these needs. However, if the training needs identification is set against the background of a falsely construct

environment and self-referential set of goals, the needs chosen will only act to perpetuate the self-constructed reality perceived by the organisation's environment.

Self-referentiality is partly the result of a closed organisational system (von Krogh & Vicari, 1993), as neither the environment nor the organisation can be seen as a single object. Organisational targets cannot be set or determined by internal self-referential processes, the link to the external environment must be made to allow organisations to become flexible and adaptable to changes in the external environment.

Maybe justice cannot be done to the self-referentiality concept in this paper, but this does not make it less of a barrier with regard to organisational learning and use of knowledge. The lack in literature on the self-referentiality concept could be an opportunity for further research to determine and possibly quantify the impact self-referentiality has on organisational learning and use of knowledge.

SUMMARY

Literature is not devoid of criticism for the usage of learning and knowledge. These criticisms fall within the parameters of ill-defined concepts, unclear processes, practices and inappropriateness of organisational culture and structure to allow for the successful implementation of organisational learning. Learning is assisted through bringing together employees within one shared organisational culture. This, however, infers a corporate cultural mentality where organisations strive for homogeneity and conformity, through the socialisation of members into a unified culture, in order to reach competitive excellence. Organisations will not learn if there are disparate assumptions and values or "organisational disabilities" residing in an organisation or its culture.

The question raised is, which organisational form is most conducive to knowledge generation and transfer, as both organisational culture and structure impact on the creation, use and transfer of new knowledge. Cultural and behavioural changes do not happen by edict or by simply making an infrastructure available. It needs to be understood as a change intervention to support organisational learning processes and to sustain it over time. Organisations have experienced unsuccessful

attempts to implement organisational learning through structures that were too rigid to allow for the sharing of knowledge. Many organisations that are trying to become organisational learning organisations do so on top of a culture that was traditionally hierarchical and competitive. "Who for example, is going to commit themselves to learning, building a shared vision and team learning if they see their colleagues in old cultural politics and succeeding, possible at the learners expense" (Teare & Dealtry, 1998).

The desire to attain a coherent culture and structure often exacerbate further as employees, whilst encouraged to innovate on the one hand, they are encouraged towards a common, self-constructed understanding. This will not only affect targeted learning needs or knowledge development, but also organisational learning. Many organisations are unwittingly designed to encourage the acquisition of procedures and behaviours they wish they had less of. These maybe because management wants something else, but are unable to design structures outside their boundaries of understanding. When there is a unified organisational goal, culture may deepen the changes of appropriate learning and use of knowledge, otherwise the organisation becomes a self-centered activity, rather than a shared ideology, and training and development could be seen as a form of control rather than employees managing their own learning.

Within the organisational literature, there is a strong emphasis on the cultural perspective of organisational learning. Culture serves as a sense-making mechanism, which guides and shapes value, behaviour and employees attitudes; it is through values that behaviour flow is guided. An organisation's culture imposes "coherent, order and meaning that enables the institutionalization of an appropriate sense-making structure to facilitate interpretation of unfamiliar events" (Weick, 1985). A learning organisation should be viewed as a metaphor rather than a distinct type of structure. Employees learn conscious communal processes to continually generate, retain and leverage individual and collective learning to improve performance of the organisational system in way important to all stakeholders and by monitoring and improving performance.

Chapter 7

FINDINGS AND CONCLUDING THOUGHTS

"Today the only remaining sustainable source of competitive advantage is implementation of new knowledge" - Lester Thurow (1992).

INTRODUCTION

The question may be raised why organisations pay so much attention to the role of assessing "learning capacity", "knowledge sharing or "use of knowledge". An even more intriguing question is why educational sciences seem to avoid this area and leave research about knowledge sharing to the business sciences. Sugarman (2001) contends that during the 1990's the concept of organisational learning and knowledge sharing became popular because management realised that it is not the availability of knowledge making an organisation competitive, but the capacity to utilise learning and knowledge to develop new technologies, capabilities and competencies. Learning and knowledge sharing are not new phenomenon; it always takes place in organisations. An organisation that does not learn continuously and is not able to continuously list, develop, share, mobilise, cultivate, put into practice, review and spread knowledge will not be able to compete effectively. That is why the ability of an organisation to improve existing skills and acquire new ones forms its most tenable competitive advantage. Knowledge ages rapidly and is liable to wear; this is one of the reasons why organisations should constantly learn.

FINDINGS

One of the major challenges for management is to understand the role of learning and knowledge in organisational change and business success. Besides the increase in speed and decrease in failure obtained through learning curve effects, little is known about the role of knowledge and learning as a promoter of change and added value. As organisations focus more on own internal knowledge and

skills, management increasingly shifts away from overseeing and deployment of fiscal and physical assets towards the management of human skills, knowledge bases and intellect within and outside the organisation. According to Sveiby (1997) knowledge intensive organisation's have to free themselves of the "mental strait-jackets" of the industrial age by employing strategies that focus on intangible rather than on tangible assets if they want to succeed.

The real challenge facing organisations concerned with using knowledge lies in understanding how to harness it. Knowledge resides in people, places and things and is given meaning through collective information required for a specific purposes or task. Knowledge, however, is not objective. The resources involved in the creation of knowledge are sources in people and objects in the immediate and remote environment. The act of knowledge production – learning – depends on the effectiveness, flexibility and unfettered availability of appropriate resources, the human and social capital embedded in people, distributed across the organisation's technologies and environment.

This paper investigated the realistic possibility of whether learning and the use of knowledge create sustainable competitive advantages. Research has highlighted the following areas, indicating that the projected theoretical outcomes may be less successful than indicated in literature, when applied in practice:

- The actual process of gaining and creating new knowledge is mostly seen as a self-referential, constructive one. This is in its very nature reactive. However through the organisational learning process, organisations are trying to gain transformation by being pro-active, which undermines the potential of competitive advantage.

- The confusion in terms such as learning, organisational learning and knowledge is seen to be wide ranging and could potentially lead to the encouragement of adding information to the organisation, but it is considered knowledge. This would mean that organisational learning and use of new knowledge appear to be adding value, when in fact the desired transformation will not emerge.

- Organisational learning requires that knowledge be used within organisational practices. This will only happen when knowledge becomes organisational knowledge, when the practice in which it is applied in becomes part of the regularized and reflexively monitored organisational practices.

- Opportunities exists for further research on the relationship between the three learning loop approaches, as well as the interaction between individuals and organisations in the application of the learning loops to improve the organisation's competitiveness.

Literature indicates that the application of learning and use of new knowledge can be enabled or constrained by:

- **Existing interpretative rules forming cognitive organisational aspect.** New knowledge should in a certain degree be in accordance with existing organisational knowledge. Even in cases where knowledge development has a more individual character, it should be possible to integrate individual knowledge with the knowledge of others, e.g. across individual business areas. In other cases it will require a social knowledge development process.

- **Existing authoritative or power relations**. To change working practices, one needs to have the authority to do so. One such form of learning is learning by "elite's". "Organisational learning becomes the process in the organisation through which members of the dominant coalition develop, over time, the ability to discover when organisational changes are required and what changes can be taken through a representative "elite" or dominant coalition" (Duncan & Weiss, 1979). This consists of the organisation's leaders, or powerful members within particular groups. From this perspective, organisations are regarded as oligarchic systems in which the dominating coalition emerges and rules the organisation. Against this background, learning and power are perceived as being closely related. The assumption is that knowledge of the powerful has the greatest chance of determining organisational decisions and changes. This is especially clear when charismatic leaders take over the organisation and change existing structures, question values, or formulate new goals. A change in leadership often functions as a trigger for

organisational learning, since basic changes are made which for years have not been challenged. In this way leaders can become agents of learning and explains why some authors speak of organisational learning as the learning of key individuals, like top management. Top management must be able to apply new knowledge or order a change in working practices. However, no one oversees all knowledge used and everyone should have some power over how knowledge is executed and applied in organisational practices to transform knowledge into organisational knowledge.

- **Distribution of economic resources**. The application of knowledge most often requires material and financial resources. For example the development of a new product might lack the financial resources for development. Such resources can both be enabling and constraining, therefor the economic power, the access to funds, needs careful attention.

- **Existing normative rules**. Normative rules are the basis for the specification of rights and obligations in specific situations. It is expected of organisation members to perform certain tasks, follow certain procedures and meet specified outputs. Standard operating procedures are examples of normative rules that provide legitimacy to change working practices on the basis of new knowledge and be constraining in prohibiting such changes.

- **Existing adoption of organisational performance.** In existing literature there are still general restrictions to validate the association between adoption of a learning culture and improvement of organisational performance. There is a need for large-scale research to understand the linkage and relationship and interaction between culture, learning loop approaches and use of knowledge.

- **Existing organisations structural characteristics**. This suggests that the way the process of organisational learning is structured is different from organisation to organisation. One dimension on which the organisation of organisational learning might differ is the proportion of organisational members involved. These and other structural differences might characterise and influence the process, content, organisational learning or use of new knowledge within learning organisations.

In summary, organisational learning:

- Is defined as the process leading to change in organisational practices based on the development of learning and use of knowledge of the actors executing those practices.
- Requires that new knowledge be applied within organisational practices, as both the development of knowledge and the application of new knowledge have important collective dimensions.
- Arises from actions and interactions between individuals and the organisation on various levels.
- Means that organisations must be able to unlearn, learn and relearn using existing or new knowledge to create sustained competitive advantages to survive in today's knowledge economy.

CONCLUDING THOUGHTS

Changes in the business and competitive environment are not new. After all, it has been said that change is the only constant. However the rate of change in today's economy is greatly accelerated, making it a major force to contend with. The increased rate of change erodes the organisation's competitive advantage and market positions. It is under these conditions' that the ability to learn and acquire knowledge, at a rate faster than the competitor, is the only source of sustainable competitive advantage (Winter, 1995). Prusak (1997) defines an organisation that drives in the current and future economic environment as one that "knows how to do things well and quickly". Thus an organisation's ability to apply and use knowledge in keeping up with rapid change is a critical success factor in its survival and growth.

Because organisational capabilities are difficult to copy they have the potential to become a source of sustainable competitive advantage. Capabilities provide the definition of individual "frames of reference" and how individuals contribute to organisational outcomes while defining individual roles. Organisation have always "managed" knowledge and the concept of coding, storing, transmitting, exchanging and using knowledge is not new. Today management practices are becoming knowledge-focused and more dependent on employees' specialist competencies, cognitive capabilities and

expertise. Competitive advantages built on capabilities, knowledge and skills are visible to competitors, but difficult to imitate and provide a base for creating sustainable and robust advantages over competitors. Adopting the view that "competence is an ability to sustain the coordinated deployment of assets in a way that helps an organisation achieve its goals" (Hamel & Prahalad, 1996), brings competence-related issues to the top of management's agenda. The strategic management of an organisation involves not only the search for defendable sources of competitive advantage, but to a higher extent also search for sources to allow for the organisation's continuous competitiveness renewal.

Traditional hierarchical cultures are anti-learning and anti-training and undermine the ability of organisation's to match and survive increasing competition. In the new economy knowledge is not reserved for people in managerial or professional positions. Having an organisation where the majority of the employees are knowledge workers is not sufficient to guarantee success against strong competition. The culture has to be right to enable the full contribution of the knowledge-workers. Organisations need to change to collaborative team culture in order to escape the no-training and waste-training traps (Jones, 1996) and focus on the process and involvement of people within the organisation (Mintzberg, 1994). Researchers have tentatively defined the linkage between culture and organisational performance (Gordon & DiTomaso, 1992). Culture, as an independent and internal variable, has become a critical tool for management in the organisational design. Culture enables an organisation to best utilise its knowledge and experiences to establish and achieve knowledge creation which is associated with triple-loop learning (Garratt, 1986).

Successful implementation of organisational learning requires an effective blend of focuses to the organisation's specific situation. As mentioned in the beginning of the paper, the increased rate of competitive environmental challenges imposed on today's organisations require things to be done differently in order to survive and prosper, or else organisations will like the Neanderthal clan become **EXTINCT**.

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